NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

WETLAND CREATION

(acre)

CODE 658

DEFINITION

A wetland that has been created on a site location which historically was not a wetland or is a wetland but the site will be converted to a wetland with a different hydrology, vegetation type, or function than naturally occurred on the site.

PURPOSE

To create wetlands that have wetland hydrology, hydrophytic plant communities, hydric soil conditions, and wetland functions and/or values.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to sites where no natural wetland occurred or where a wetland exists, or existed, and the wetland characteristics (hydrology, vegetation, and functions) will be different from what historically occurred.

This practices applies on areas with 2% slope or less, on both hydric and non-hydric soils.

When an area is being planned for shallow water under this standard, the majority of the area should be composed of somewhat poorly drained to poorly drained soils that have moderate to slow permeability (less than or equal to 2.0 inches per hour).

Upon completion of the practice the site will meet the current NRCS definition of Wetland, if hydric soils exist at the site.

This practice is applicable only if hydrologic conditions can be approximated by modifying drainage and/or artificial flooding of a duration and frequency to create and maintain wetland conditions during an average annual precipitation event. The wetland class or subclass will be specified.

This practice does not apply to: a constructed wetland (656) intended to treat point and non-point sources of water pollution; wetland enhancement (659) intended to rehabilitate a degraded wetland where specific functions and/or values are enhanced beyond original conditions; or wetland restoration (657) intended to rehabilitate a degraded wetland where the soils, hydrology, vegetative community, and biological habitat are returned to original conditions.

CRITERIA

General Criteria

The landowner shall obtain necessary local, state, and federal permits that apply before the practice is applied.

Created wetlands will only be located where the soils, hydrology and vegetation can be modified to meet the current NRCS criteria for wetland.

Establish vegetative buffers on surrounding uplands to reduce sediment and soluble and sediment-attached substances carried by runoff and/or wind. Refer to standards and specifications for Filter Strip (393) and Riparian Forest Buffer (391) for additional information.

Document the soil, hydrology and vegetative characteristics of the site and its contributing watershed before alteration.

Criteria for Hydric Soil Conditions

Establish an approximation of the soil microtopography typical for the wetland type(s) being established.

Criteria for Wetland Hydrology and Shallow Water Creation

The hydrology of the site is defined as the rate and timing of inflow and outflow, source, duration, frequency, and depth of flooding, ponding or saturation.

All shallow water areas should be designed to provide varying water depths between 1 and 18 inches over at least 75% of the pool area. The remainder of the pool area can be between 2 and 4 feet deep to provide semipermanent to permanent water. Shallow water areas should be designed to provide some water for the majority of the year.

The Additional Criteria For Providing Restoration of Wetlands and Creation of Shallow Water Areas in the Dike (356) and Structure For Water Control (587) NRCS practice standards will be used as appropriate. Refer to the Engineering Field Handbook, Chapter 13, "Wetland Restoration, Enhancement, and Creation," and Chapter 6, "Structures," for additional design information.

The following criteria shall be followed when using excavation to develop shallow water areas:

- *All side slopes should be as flat as possible but shall not be steeper than 4:1.*
- *When possible at least one-third of the side slopes should be 10:1 or flatter.*
- *Material excavated during the formation of shallow water areas shall be disposed of according to the Excavated Material section of the Criteria for Excavated Ponds in the NRCS Pond (378) standard or used to create habitat mounds using the following criteria:*
  - *Habitat mounds placed in areas with designed water levels should vary in elevation between 0.5 feet below the full pool elevation and 3 feet above the full pool elevation.*
  - *Mounds may be shaped in a linear fashion to form ridges or in a circular or elliptical fashion to form islands.*
  - *Mound side slopes should be as flat as possible but shall not be steeper than 4:1.*
  - *Mounds may be rough graded and left with rough side slopes.*

Existing drainage systems will be utilized, removed, or modified as needed to achieve the intended purpose.

Criteria for Hydrophytic Vegetation

Establish hydrophytic vegetation typical for the wetland type(s) being established.

Preference shall be given to native wetland plants with localized genetic material. Plant materials collected or grown from material collected within a 200 mile radius from the site and within plant hardiness zone 6 is considered local.

Where natural colonization of selected species will realistically dominate within 5 years, then natural regeneration can be left to occur.

Adequate substrate material and site preparation necessary for proper establishment of the selected plant species shall be included in the design.

Refer to soils surveys and Section II of the Field Office Technical Guide for suitable species based on the soil types and hydrology of the site.

If the targeted hydrophytic vegetation is predominantly herbaceous, several species adapted to the site will be established. Herbaceous vegetation may be established by a variety of methods including: mechanical or aerial seeding, topsoiling, organic mats, etc., over the entire site, or a portion of the site and at densities and depths appropriate.

Forested wetland establishment will include a minimum of three hard mast species, where appropriate. Seedling preparation and planting will follow the criteria of Conservation Practice 612, Tree Planting.

Criteria for Wetland Functions

Created wetland goals and objectives should include targeted natural wetland functions for the wetland type and the site location.

Project goals and objectives shall minimize adverse impacts to adjacent wetlands.

CONSIDERATIONS

Consider effect of volumes and rates of runoff, infiltration, evaporation, and transpiration on the water budget.

Consider the potential for a change in rates of plant growth and transpiration because of changes in the volume of available soil water.

Consider effects on downstream flows or aquifers that would affect other water uses or users.

Consider effects on wetlands or water-related resources and wildlife habitats that would be associated with the practice.

Considering positioning site(s) adjacent to existing wetlands to increase wetland system complexity and diversity, decrease habitat fragmentation, and ensure colonization of the site by wetland flora and fauna.

Consider linking wetlands by corridors wherever appropriate to enhance the wetland's use and colonization by the flora and fauna.

The nutrient and pesticide tolerance of the species planned should be considered where known nutrient and pesticide contamination exists.

Consider effects on temperature of water resources to prevent undesired effects on aquatic and wildlife communities.

Embankments and excavated slopes should be located and shaped in a manner that is compatible with the existing landscape.

PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each site. Specifications shall be recorded using approved specifications sheets, job sheets, narrative statements in the conservation plan, or other documentation. Requirements for the operation and maintenance of the practice shall be incorporated into site specifications.

OPERATION AND MAINTENANCE

The following actions shall be carried out to insure that this practice functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use of the practice (operation), and repair and upkeep of the practice (maintenance):

Any use of fertilizers, mechanical treatments, prescribed burning, pesticides and other chemicals shall not compromise the intended purpose. Biological control of undesirable plant species and pests (e.g., using predator or parasitic species) shall be implemented where available and feasible;

Timing and level setting of water control structures required for the establishment of desired hydrologic conditions or for management of vegetation;

Inspection schedule for embankments and structures for damage assessment;

Depth of sediment accumulation to be allowed before removal is required;

Management needed to maintain vegetation, including control of unwanted vegetation;

Haying and livestock grazing will be managed to protect and enhance established and emerging vegetation. Program specific rules may dictate the use for haying and grazing.

Shallow water areas created under this standard shall be managed according to the Shallow Water Management for Wildlife (646) practice standard.

REFERENCES

NRCS Conservation Practice Standards:

Dike (356), Filter Strip (393), Pond (378),
Riparian Forest Buffer (391)
Shallow Water Area Management (646)
Structure for Water Control (587)
Tree/Shrub Establishment 612
Wildlife Wetland Habitat Management (644)

NRCS Engineering Field Handbook, Chapter 6.